

REMARKS/ARGUMENTS

Claims 45-63, 65-89 and 101 are pending in the application. Claims 45-63, 65-89 and 101 stand rejected. Through this Amendment and Response, no claims have been amended and no claims have been cancelled. As explained in more detail below, Applicants submit that all claims are in condition for allowance and respectfully request such action.

Claim Rejections – 35 USC § 103

Claims 45-63, 65-89 and 101 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gotwald (US 5,987,518) in view of Banker et al. (US 5,497,187) and Nicolas et al. (US 5,453,797). Applicants respectfully traverse the rejection in view of the Remarks below.

A. The Nicolas Document

1. Independent claims 45, 50, 56 and 59

The Office Action asserts that Nicolas teaches the “place[ment of] differently prioritized data streams on different portions of the frequency spectrum, granting higher priority data a lower C/N ratio such that the higher priority data has a higher maximum range than lower priority data.” (Office Action dated July 25, 2008, page 4). Applicants respectfully disagree. Specifically, Applicants cannot find any teaching or suggestion within Nicolas that discloses a hierarchically modulated data stream that “is configured to have a maximum range greater than at least one other hierarchically modulated data stream” as recited in independent claims 45, 50, 56 and 59.

Nicolas discloses the “remov[al of] an interfering signal from a digitally-modulated signal.” (Nicolas, Col. 5, ll. 40-42). The removal of the interfering signal is performed because, according to Nicolas, “the most dominant restriction to HDTV system performance is *co-channel interference* between HDTV signals and existing NTSC signals.” (Nicolas, Col. 6, ll. 62-64, emphasis added). When discussing the industry’s past attempts to reduce or eliminate co-channel interference, Nicolas provides an overview of “conventional ways to deal with co-channel interference.” (Nicolas, Col. 2, ll. 40-41). In the method cited by the Office Action:

The streams are separated and arranged so *that part of the signal* is transmitted in a band below the NTSC carrier [sic] frequency and part [sic] of the signal is transmitted in a band located above the NTSC carrier frequency. A null occurs at the NTSC carrier frequency; consequently, no signal power is transmitted near this frequency. The power spectral density of the lower frequency band or the 'high priority carrier' [sic] is higher by 5 dB compared to the higher frequency band or "standard priority carrier [sic]". This power difference ensures *that the carrier-to-noise threshold of the high-priority channel is 5 dB lower than the carrier-to-noise [sic] threshold of the standard priority channel*.

(Nicolas, Col. 4, ll. 45-56, emphasis added). Applicants respectfully submit that the above-cited discussion does not teach, disclose, or suggest a hierarchically modulated data stream "configured to have a maximum range greater than at least one other hierarchically modulated data stream" as recited in independent claims 45, 50, 56 and 59. Rather, the difference in the spectral densities among the two streams disclosed in Nicolas are utilized to reduce interference with NTSC bands when both streams, each having "*part of the signal*" that makes up the HDTV signal are received at the same NTSC receiver. In fact, as discussed just below the cited text, Nicolas expressly states that:

[T]his latter design relies on the fact that the high priority channel occupies a band which is normally strongly attenuated by the Nyquist filters of NTSC receivers, and *the idea is that this high power digital signal will cause very little interference to NTSC receivers*, while at the same time avoiding the NTSC video carrier frequency that is the frequency component most detrimental to **the HDTV signal**.

(Nicolas, Col. 4, l. 62 - Col. 5, l. 2, emphasis added). Nothing within Nicolas contradicts any indication that both streams must be received, thus one stream would not be "configured to have a maximum range greater than at least one other hierarchically modulated data stream." Thus, the disclosure cited in Nicolas adjusts the C/N ratio of the two streams and does not teach, disclose, or suggest a data stream having a "maximum range greater than at least one other hierarchically modulated data stream."

The Office Action further alleges that Column 4 of Nicolas teaches that "the higher priority data has a higher maximum range than lower priority data." (See Office Action dated July 25, 2008, page 4). Applicants are unable to locate any support for this assertion, however, believe the Office Action is equating the power spectral density of the data streams with a

maximum range for each stream. Applicants respectfully request clarification and correction if their understanding is correct and further respectfully request an explanation for the assertion. Furthermore, Applicants submit that numerous inconsistencies exist in the cited paragraph. Specifically, the terms “stream” “channel,” “carrier,” and “data” each appear within the text describing the specific interference-removing design without a clear indication of their function and/or relationship, if any, relative to each other. For example, Nicolas refers to a “high priority channel,” “high priority data,” and “carriers.” Applicants respectfully request that the Examiner provide an interpretation of these terms to the extent that the Examiner is relying on the cited text in rejecting the pending claims. For example, is the Office Action alleging that the “high priority data” is within the “high priority channel” or is in within the “high priority carrier?” In this regard, the term “career” also appears within the cited text. Applicants believe “career” is a typographical error, and as such, respectfully request clarification whether the Examiner is interpreting the term “career” as “channel,” “carrier,” “data” or another term. Furthermore, Nicolas later states that “[t]he high priority data represents one fifth of the total power.” (Nicolas, Col. 4, ll. 56-57). Applicants respectfully request that the Examiner provide an interpretation of this sentence within the text cited by the Office Action.

For at least these reasons, Applicants respectfully submit that Nicolas does not teach, disclose, or suggest a hierarchically modulated data stream “configured to have a maximum range greater than at least one other hierarchically modulated data stream” as recited in independent claims 45, 50, 56 and 59, and therefore, respectfully request the withdrawal of independent claims 45, 50, 56, and 59 and claims depending therefrom.

2. Independent claim 101

In regards to independent claim 101, Applicants cannot locate any discussion within the Office Action explaining how the teachings of Nicolas apply to the recited subject matter of claim 101. In addition to the arguments above, Applicants respectfully submit that Nicolas does not teach a “wireless device” as recited in claim 101 nor is there any teaching, disclosure, or suggestion of “a receiver configured to receive a plurality of hierarchically modulated simultaneously transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content wherein the terminal is

configured to simultaneously receive the contents of any of the data streams having adequate C/N ratio at the location of the terminal.” Furthermore, as explained in more detail below in Section B, neither Banks nor Gotwald (the other two references cited in the pending §103 rejection) teach, disclose, or suggest the recited subject matter of independent claim 101. Applicants, therefore, respectfully request reconsideration and withdrawal of the rejection in regards to claim 101.

B. The Banker Document

The Office Action asserts that “Banker discloses placing differently prioritized data into different streams which are simultaneously transmitted.” (Office Action dated June 25, 2008, page 3). Applicants respectfully disagree that the different streams that the streams of Banker are simultaneously transmitted. Applicants further respectfully disagree that the data streams of Banker are hierarchically modulated.

As noted by the previous Office Action, the “streams [of Banker] are ultimately modulated together and subsequently transmitted from combiner 106.” (Office Action dated June 29, 2007, page 2). Nowhere in Banker is the combiner 106 disclosed or suggested to transmit simultaneously transmitted data streams. Rather, as explained in more detail below, they are merely conventionally transmitted in sequential order through a cable. In this regard, the previous Office Action stated that “fig 5a [of Banker] simply illustrates a baseband video signal.” (Office Action dated June 29, 2007 at page 2). Figs 5(b) and 5(c) of Banker, however, also show the serial arrangement. A chronology of the changes performed on the transmitted content clearly demonstrates that the serial arrangement is preserved. First, Banker explicitly states “[d]ifferent groups of data are transmitted on a **serial** data channel....” (Col. 10, ll. 37-38; emphasis added). As shown in Figure 5(a), the data streams discussed in the cited portion of Banker (see Col. 11, lines 1-17, showing streams (7), (8), and (9)) are not simultaneously transmitted). The same streams are preserved in Figure 5(b) with the removal of only select equalizing pulses at select lines. There are no “hierarchically modulated simultaneously transmitted data streams.” Rather, as explicitly stated in Banker, “[t]here need not be a two step process of first removing equalizing pulses at selected lines, such as lines 7-9, as shown in Fig 5b.” (Banker, Col. 24, ll. 29-34). Further, Banker states that “[l]ines 7-9 of the vertical blanking

interval of an NTSC standard television signal comprises three times 63.5 microseconds duration or approximately 190 microseconds. (Banker, Col.24, ll. 35-37).

Thus, Banker merely discusses the multiplexing of data, which is a less efficient process where data is taken from different streams and sent in a sequential order, but not simultaneously in a plurality of data streams as claimed in the rejected claims. Specifically, independent claims 45 and 56 recite an apparatuses that are operable to “place the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams,” independent claim 50 recites a method that “place[es] the content into at least one of a plurality of hierarchically modulated simultaneously transmitted data streams,” independent claim 59 is directed towards a method that recites “assigning the content element to at least one of a plurality of hierarchically modulated simultaneously transmitted data streams,” and claim 101 recites “a receiver configured to receive a plurality of hierarchically modulated simultaneously transmitted data streams.”

For at least the reasons above, Applicants respectfully submit that neither Gotwald, Banker, nor Nicolas, either in combination or individually, teach, disclose, or suggest the subject matter of the pending claims, and therefore respectfully request reconsideration and withdrawal of the rejection.

Applicants respectfully disagree that Banker, or any other reference of record, teaches hierarchal modulation as recited in the rejected claims. Figure 2 of the instant application more readily illustrates one embodiment of hierarchical modulation that may be utilized in achieving the simultaneous transmission, for example, in the DVB-T standard. As described in the Substitute Specification, a MPEG-2 bit stream can be split into two parts, such as a high priority (HP) stream and a low priority (LP) stream, “both of which are transmitted simultaneously.” (See paragraph 0022). A bit sequence of the data which modulates the HP stream is used to select quadrant 31 of the constellation diagram shown in Figure 2, whereas the bit sequence of the data which modulates the LP stream only selects a particular constellation point 33. The result is that the HP stream is more robust as a receiver can more easily identify a quadrant over a particular constellation point. However, the bit rate of the HP stream will be less than that of the LP stream. Thus the LP stream can be utilized by the receiver where the C/N ratio is such as to

allow the receiver to detect not only the quadrant but also a particular constellation point. (Paragraph 22).

Such aspects are not taught, disclosed, or suggested by Banker or any other art of record. Specifically, the Examiner alleges that “[i]t would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Gotwald to include the data streams are corresponding hierarchical modulated data streams that are simultaneously transmitted, as taught by Banker, for the benefit of separating data streams so that the lower priority data will not interfere with the transmission of higher priority data.” (Office Action dated July 28, 2008, page 3, errors in original). Applicants respectfully submit that combining the references would not teach, disclose, or suggest the subject matter of the rejected claims. Each of the three data types of Gotwald are “prioritized” by three separate and distinct priority modules (*see, e.g.*, Col. 4, lines 24 – 27, 32 – 37, and 39 – 42). Therefore, the three categories are not prioritized among each other at the priority modules, but rather prioritized only within a selected protocol. The queues are then transmitted through a single broadband channel. (*see* Col. 3, lines 2 – 3, 51 – 53, and Fig. 1, item 16).

For at least the reasons above, Applicants respectfully submit that neither Gotwald, Banker, nor Nicolas, either in combination or individually, teach, disclose, or suggest the subject matter of the pending claims, and therefore respectfully request reconsideration and withdrawal of the rejection.

All rejections having been addressed, applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the number set forth below.


Applicant believes there is no fee due in association with the filing of this response, however, should there be any fees due the Commissioner is hereby authorized to charge any such fees or credit any overpayment of fees to Deposit Account No. 19-0733.

Appln. No.: 09/893,421
Response/Amendment dated September 2, 2008
Response to Office Action dated July 25, 2008

Respectfully submitted,

BANNER & WITCOFF, LTD.

Dated: September 2, 2008

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